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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/516,369

12/15/2004

Jean-Claude Fayard

PLAS-023

1425

32954 7590 04/23/2007

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EXAMINER

GREENE, JASON M

ART UNIT

PAPER NUMBER

1724

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/516,369

Applicant(s)

FAYARD, JEAN-CLAUDE

Examiner

Jason M. Greene

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte* Quayle, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 14-30 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-23 is/are allowed.
- 6) ☒ Claim(s) 24 and 26-30 is/are rejected.
- 7) ☒ Claim(s) 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/1/04</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 24, 26 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusuda et al. (US 4,840,028) in view of Japanese Patent Application Publication JP 9-222009.

With regard to claims 24 and 26, Kusuda et al. discloses a device for filtration of exhaust gases comprising means for filtration (34a,34b) of said exhaust gases disposed in a reaction chamber (33a,33b) in the path of the exhaust gas stream, produced by the engine, wherein the filtration means comprises at least two assemblies equipped with a filter cartridge and a flow obstruction means (16), wherein each of the filter cartridges has a flow obstruction means (16) disposed upstream controlled by an electronic computer (the ECU) taking into account the engine operating conditions, in order to isolate at least one cartridge when the accelerator position is not zero in Figs. 1-4 and col. 2, line 29 to col. 7, line 15.

Kusuda et al. does not disclose the assemblies each comprising a catalyst support adjacent each filter cartridge.

JP 9-222009 teaches a similar device comprising a catalyst support (2) adjacent a filter cartridge (3) in Fig. 1 and the English language abstract.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the catalyst support of JP 9-222009 into the device of Kusuda et al. to provide for removal of noxious gaseous compounds and to allow the heat produced during regeneration of the filter cartridge to partially activate the catalyst on the catalyst support, as suggested by JP 9-222009 in the English language abstract.

With regard to claim 29, JP 9-222009 discloses a system for post-injection of diesel into the exhaust gases, via an atomizer (4), upstream of the filtration device and the catalyst, controlled by an electronic computer in Fig. 1 and the English language abstract.

3. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kusuda et al. (US 4,840,028) and Japanese Patent Application Publication JP 9-222009 as applied against claim 24 above, and further in view of Saito et al. (US 6,120,583).

With regard to claim 27, Kusuda et al. does not teach the filtration means comprising at three cartridges, each having a flow obstruction means. Saito et al.

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discloses a similar device comprising four filter cartridges (3), wherein each cartridge comprises a flow obstruction means (16) in Fig. 1 and col. 3, lines 1-43.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the multiple filters of Saito et al. into the device of Kusuda et al. to provide for additional flow area, as is well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the separate flow obstruction means to prevent having to employ a complicated butterfly valve capable of obstructing multiple filters.

With regard to claim 28, Kusuda et al. does not disclose the flow obstruction means comprising a small calibrated orifice, but Saito et al. teaches using such an orifice in Fig. 1 and col. 3, lines 1-43.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the small orifice of Saito et al. into the flow obstruction means of Kusuda et al. to allow gases to be expelled from the filter cartridges, as suggested by Saito et al. in col. 3, lines 38-43.

4. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kusuda et al. (US 4,840,028) and Japanese Patent Application Publication JP 9-222009 as applied against claim 24 above, and further in view of Dementhon et al. (US 6,090,172).

Kusuda et al. and JP 9-222009 do not disclose the diesel injected containing an organometallic combustion catalyst, but Dementhon et al. teaches it being known to use such an additive to lower soot ignition temperatures in col. 1, lines 43-48.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the organometallic additive of Dementhon et al. to the diesel of Kusuda et al. and JP 9-222009 to lower the ignition temperature of the soot to facilitate regeneration, as suggested by Dementhon et al. in col. 1, lines 43-48.

***Allowable Subject Matter***

5. Claims 14-23 are allowed.
6. Claim 25 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter:

With regard to claims 14-23, Kusuda et al. (US 4,840,028) discloses a method for filtration of exhaust gases, whereby all or part of the particulates present in the exhaust gases are retained on filtration means (34a,34b) and are burnt off during regeneration,

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the method comprising obstructing (using valve 16) at least a portion of the filtration means in response to a detected pressure drop exceeding a predetermined threshold, and subsequently heating the obstructed filtration means using a fuel fired heater in Figs. 1-4 and col. 2, line 29 to col. 7, line 15.

Japanese Patent Application Publication JP 9-222009 teaches the particles present of filtration means (3) being burnt by the action of a combustion catalyst in Fig. 1 and the English language abstract.

The prior art made of record does not teach or fairly suggest the method of claim 14 wherein at least a portion of the filtration means is obstructed as soon as the temperature of the exhaust gas to be filter becomes equal to or lower than a threshold temperature, so as to limit cooling of the obstructed portion and to maintain same at a temperature that is equal to or greater than the threshold temperature, up to the time when the exhaust gas temperature again become greater than the threshold temperature, and thereby permit accelerated regeneration of the obstruction portion of the filtration means.

With regard to claim 25, Levendis et al. (US 5,426,936) discloses a similar device comprising means for recirculating the exhaust gases at he engine intake in Fig. 10.

The prior art made of record does not teach or fairly suggest the device of claim 24 wherein the means for recirculating the exhaust gas at the engine intake are associated with the cutoff of the floe in one or a plurality of the cartridges when the

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engine is not accelerated, so that the increase in backpressure generated automatically opens a valve that permits recirculation of the exhaust gas.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Goerlich, Peter et al., and bailey et al. references disclose similar exhaust gas filtration systems.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

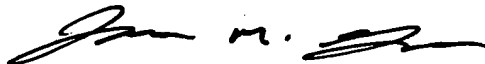
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason M. Greene  
Primary Examiner  
Art Unit 1724

  
4/16/07

jmg  
April 16, 2007